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Goeckel

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[54] **ROLLER SKATE CHASSIS**

[76] Inventor: **Gregory W. Goeckel**, 1839 Sherwood Dr., Defiance, Ohio 43512

[21] Appl. No.: **938,109**

[22] Filed: **Sep. 26, 1997**

Related U.S. Application Data

[63] Continuation of Ser. No. 539,185, Oct. 4, 1995, abandoned.

[51] **Int. Cl.**[6] **A63C 17/04**

[52] **U.S. Cl.** **280/11.22**; 280/11.27; 280/11.28

[58] **Field of Search** 280/11.22, 11.27, 280/11.28, 79.11; 301/112, 121, 132

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Assistant Examiner—Bridget Avery
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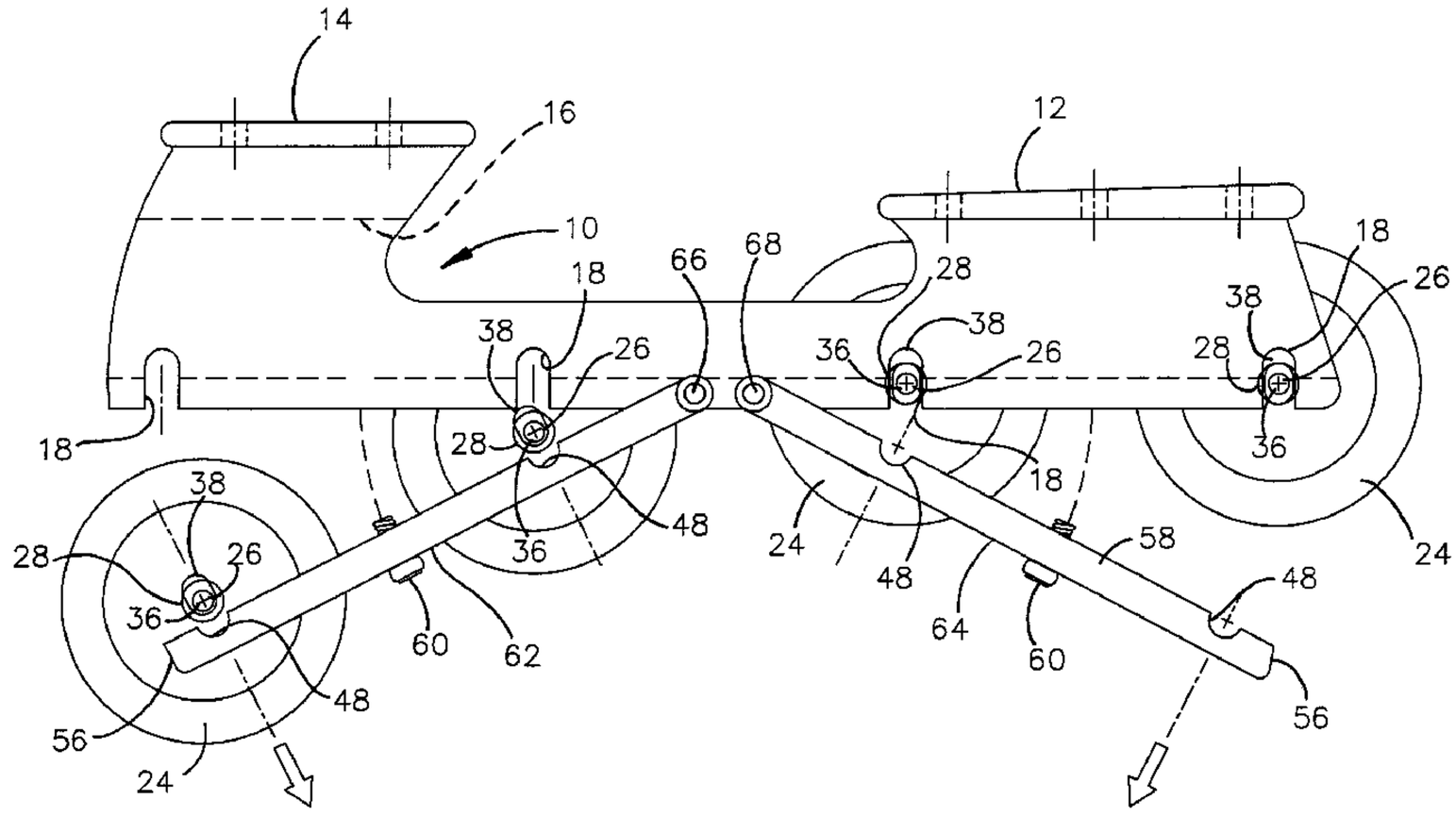
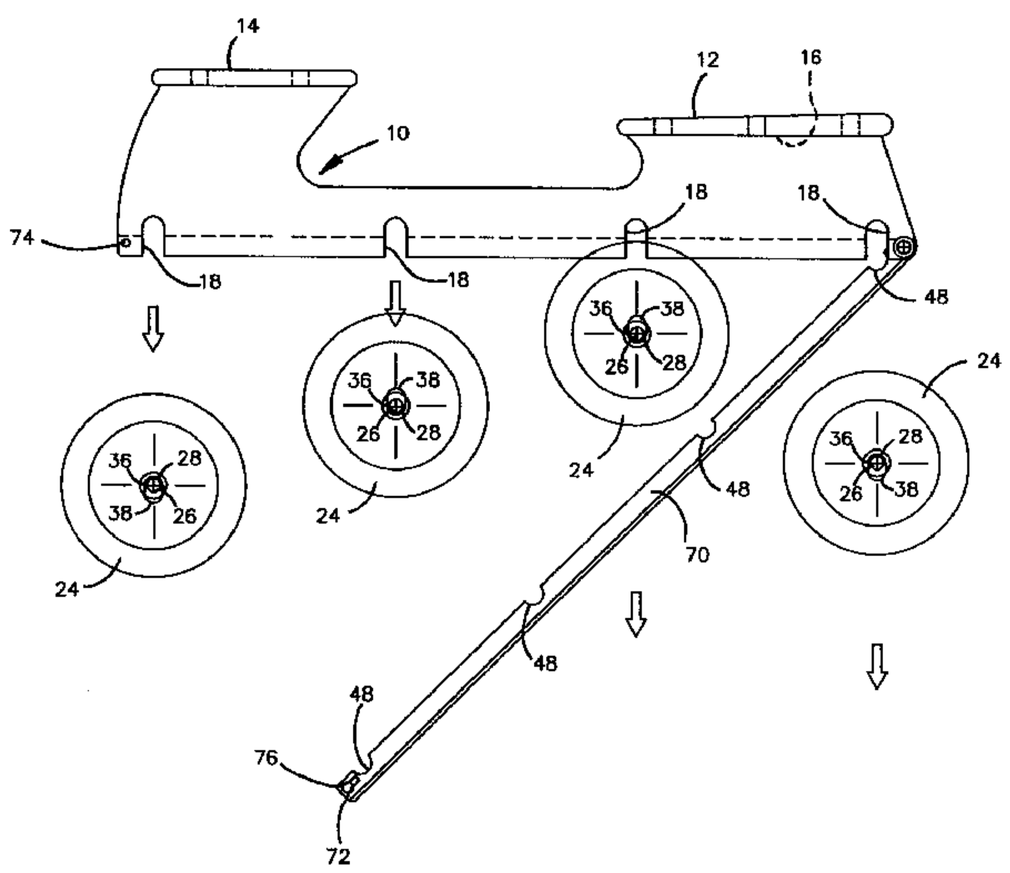
[57] **ABSTRACT**

An improved inline skate chassis having a downwardly opening wheel slot extending longitudinally of the chassis. A plurality of downwardly open spaced apart axle slots extend transversely of the wheel slot. A plurality of wheels are mounted on axles with opposite ends. A pair of wheel mounts for each wheel is positioned on the axle adjacent the opposite axle ends, respectively. The wheel mounts are removably secured in the axle slots with the wheels in the wheel slot whereby each of the wheels may be reversed, replaced or changed in position as desired during use.

26 Claims, 9 Drawing Sheets





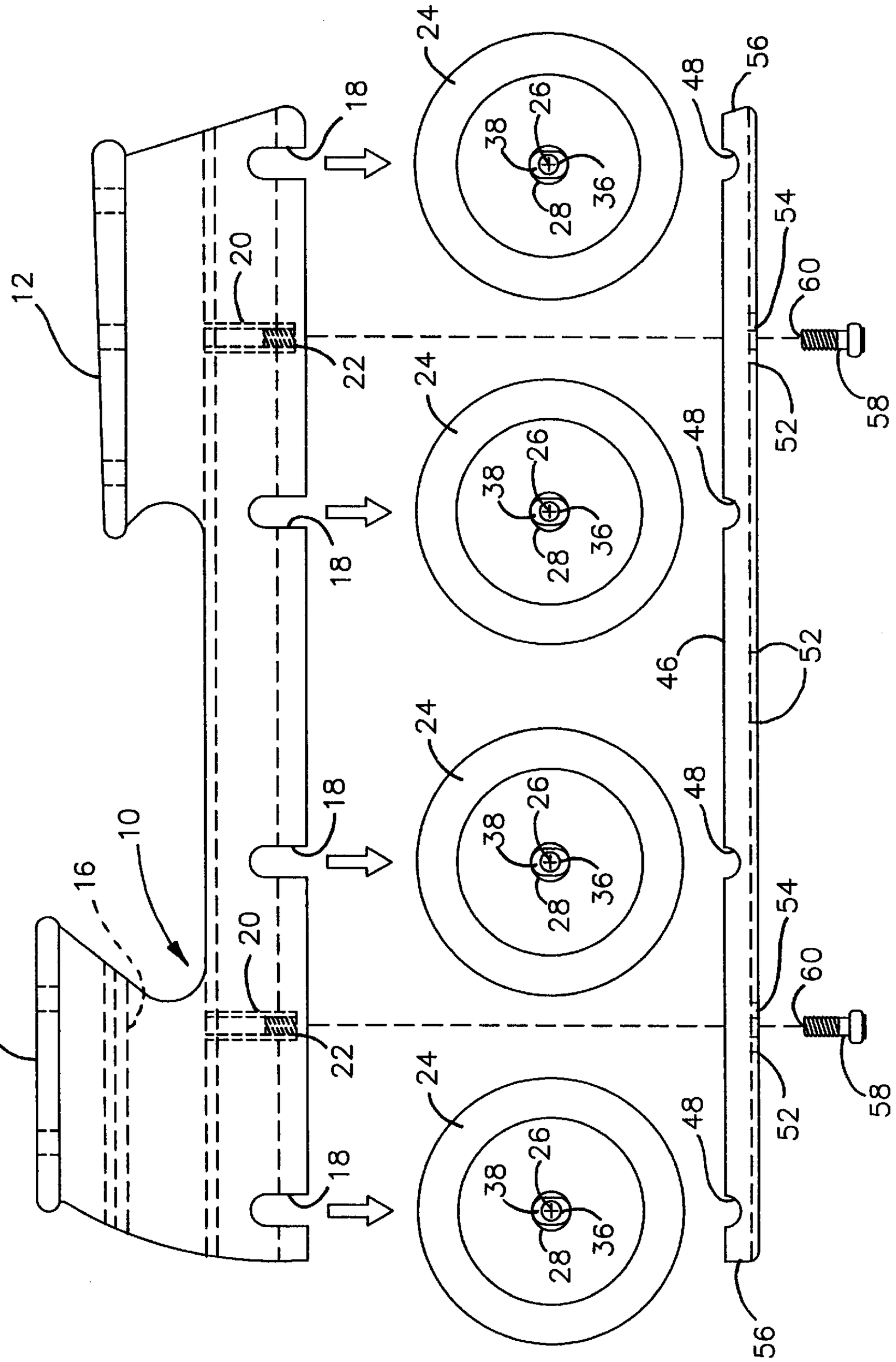


Fig. 1

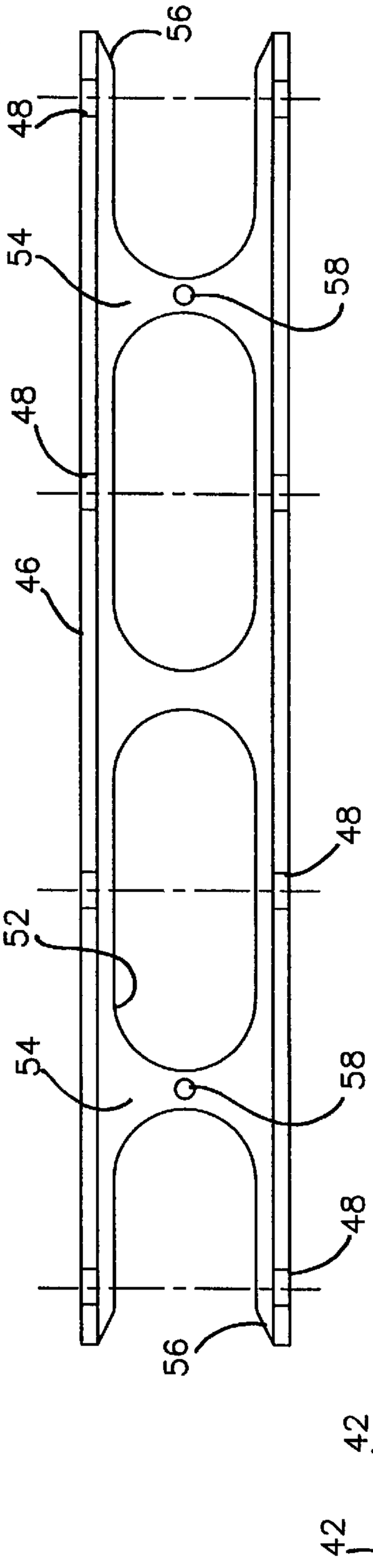


Fig. 2

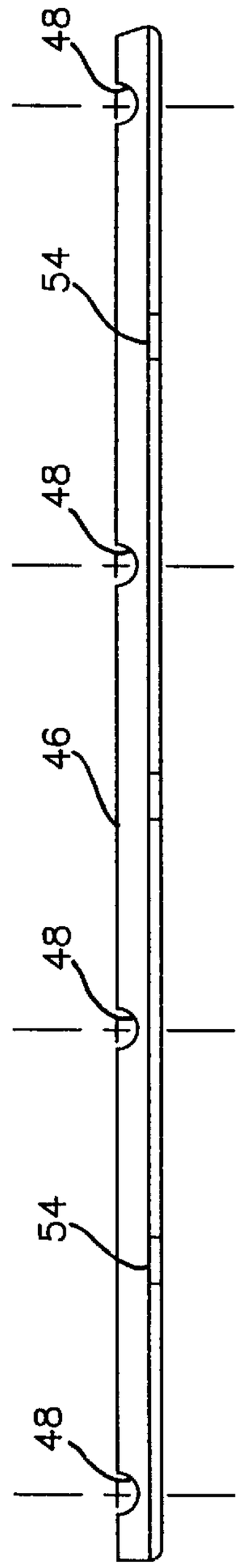


Fig. 3

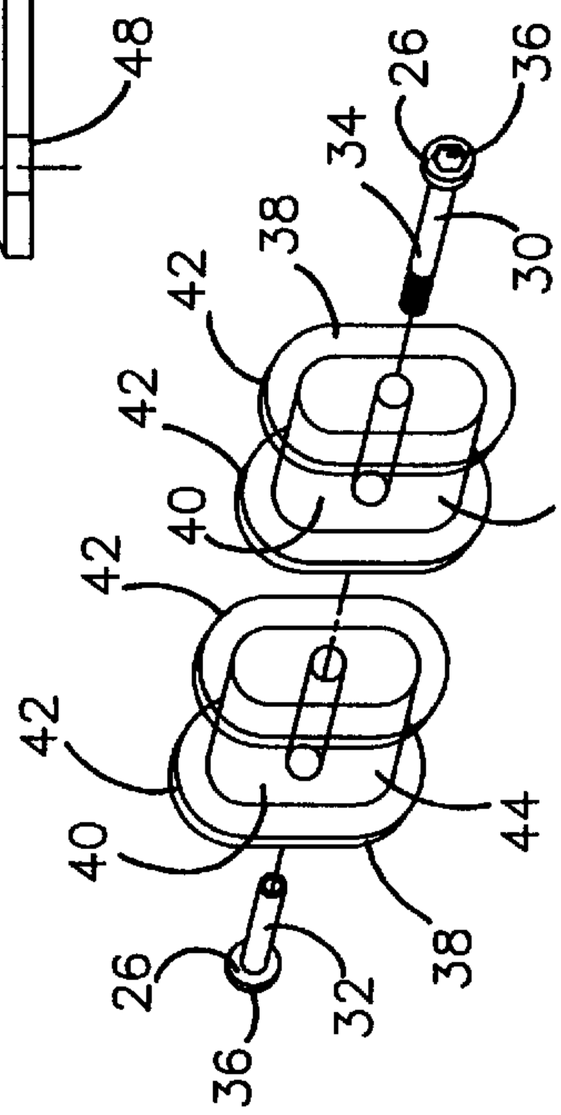


Fig. 5

Fig. 4

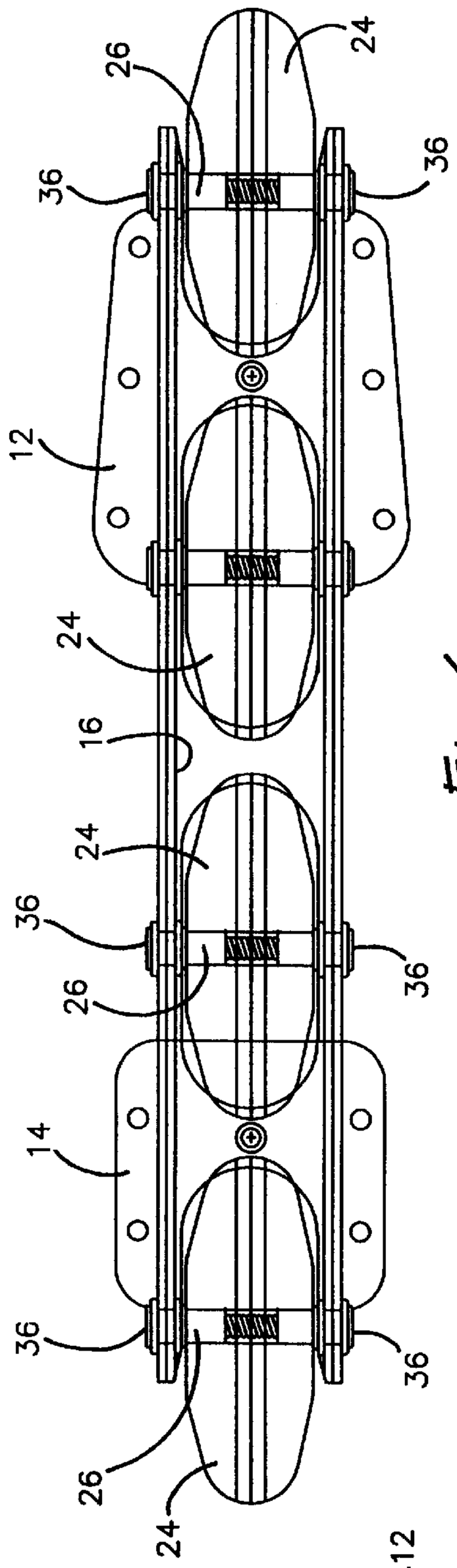


Fig. 6

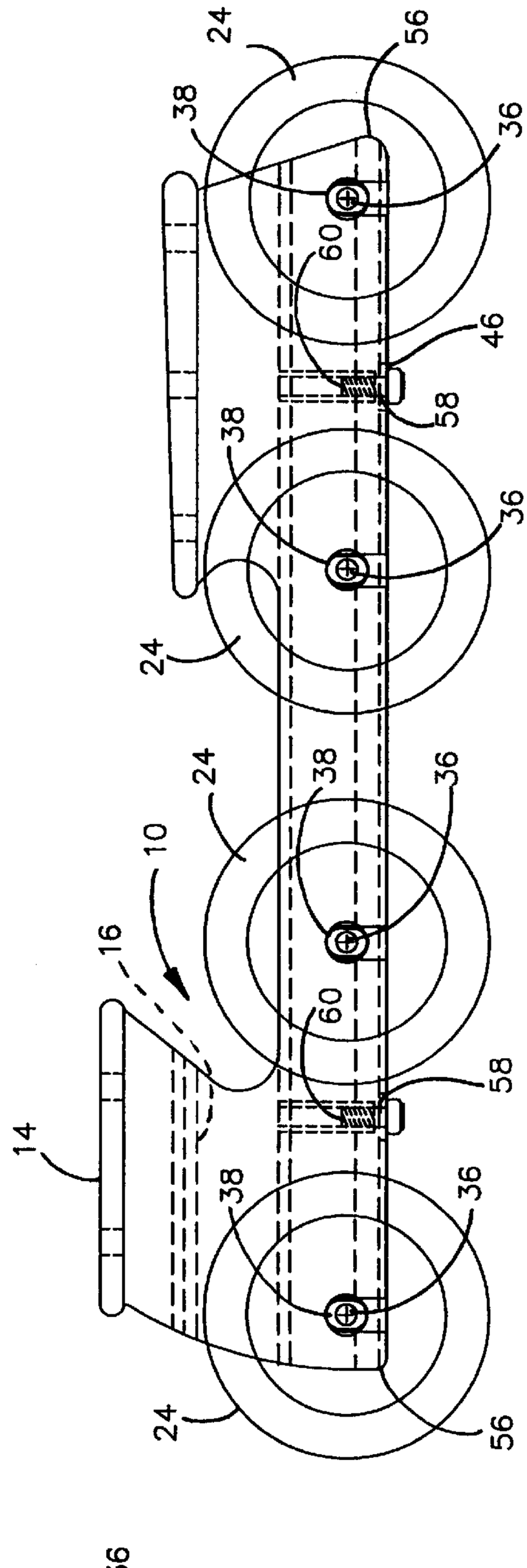


Fig. 8

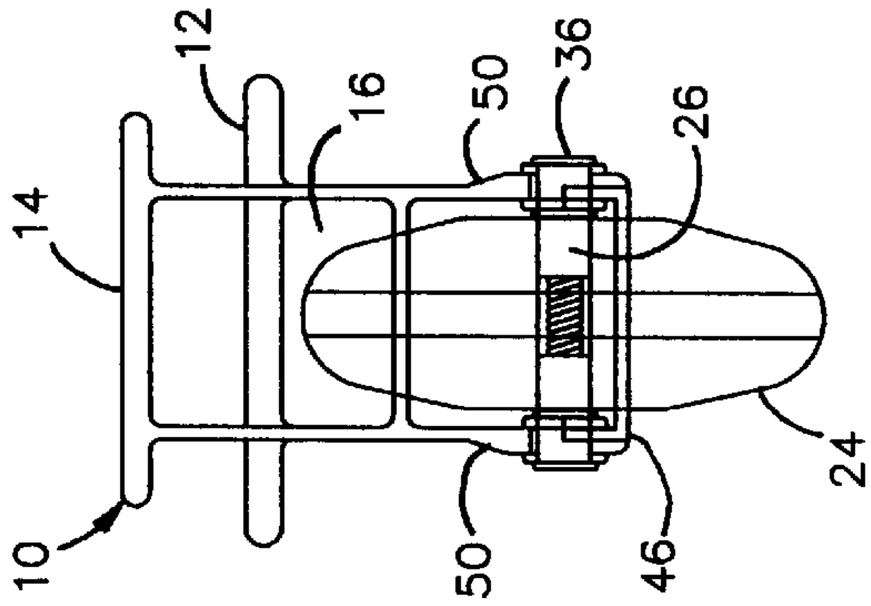


Fig. 7

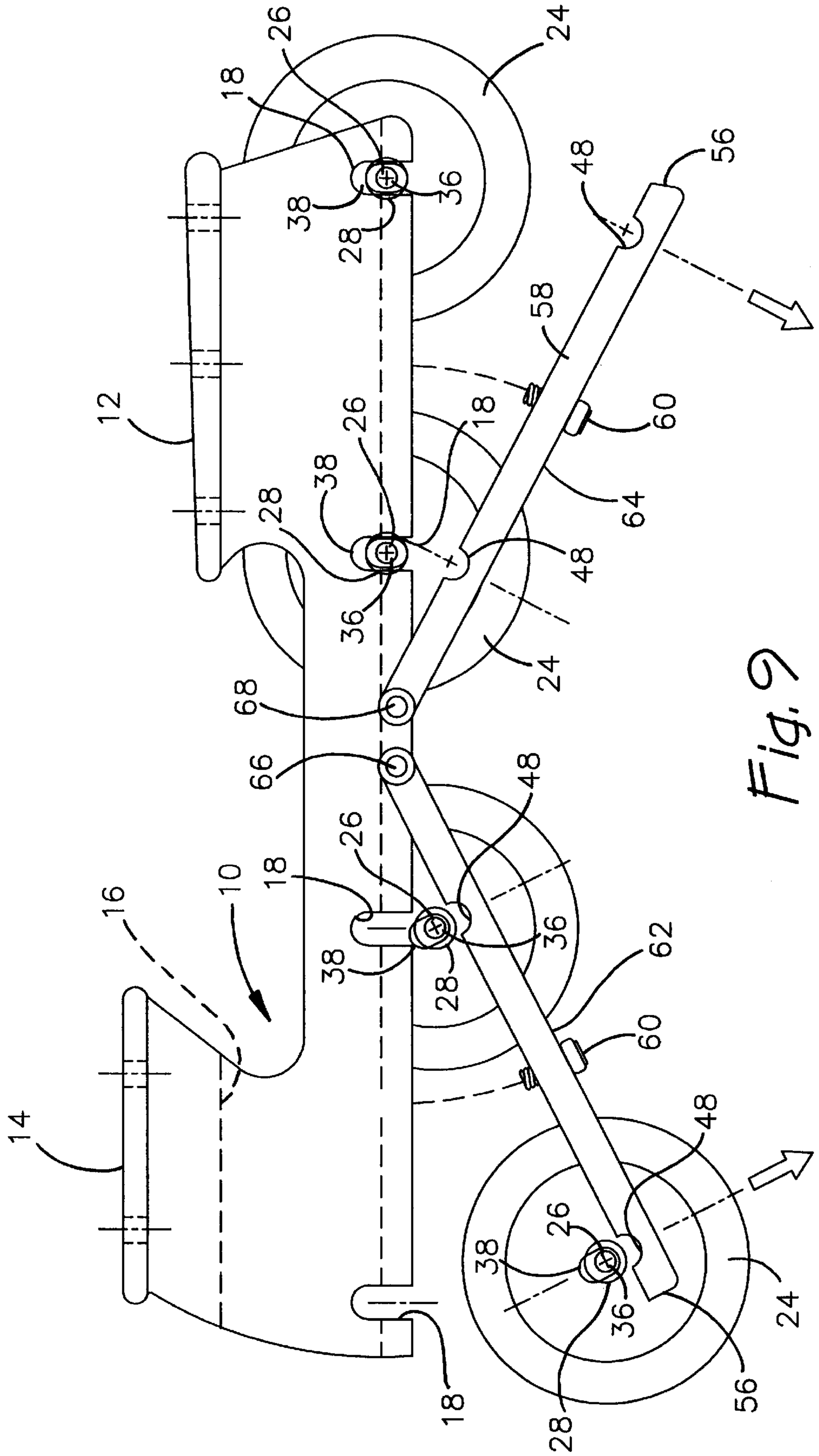


Fig. 6

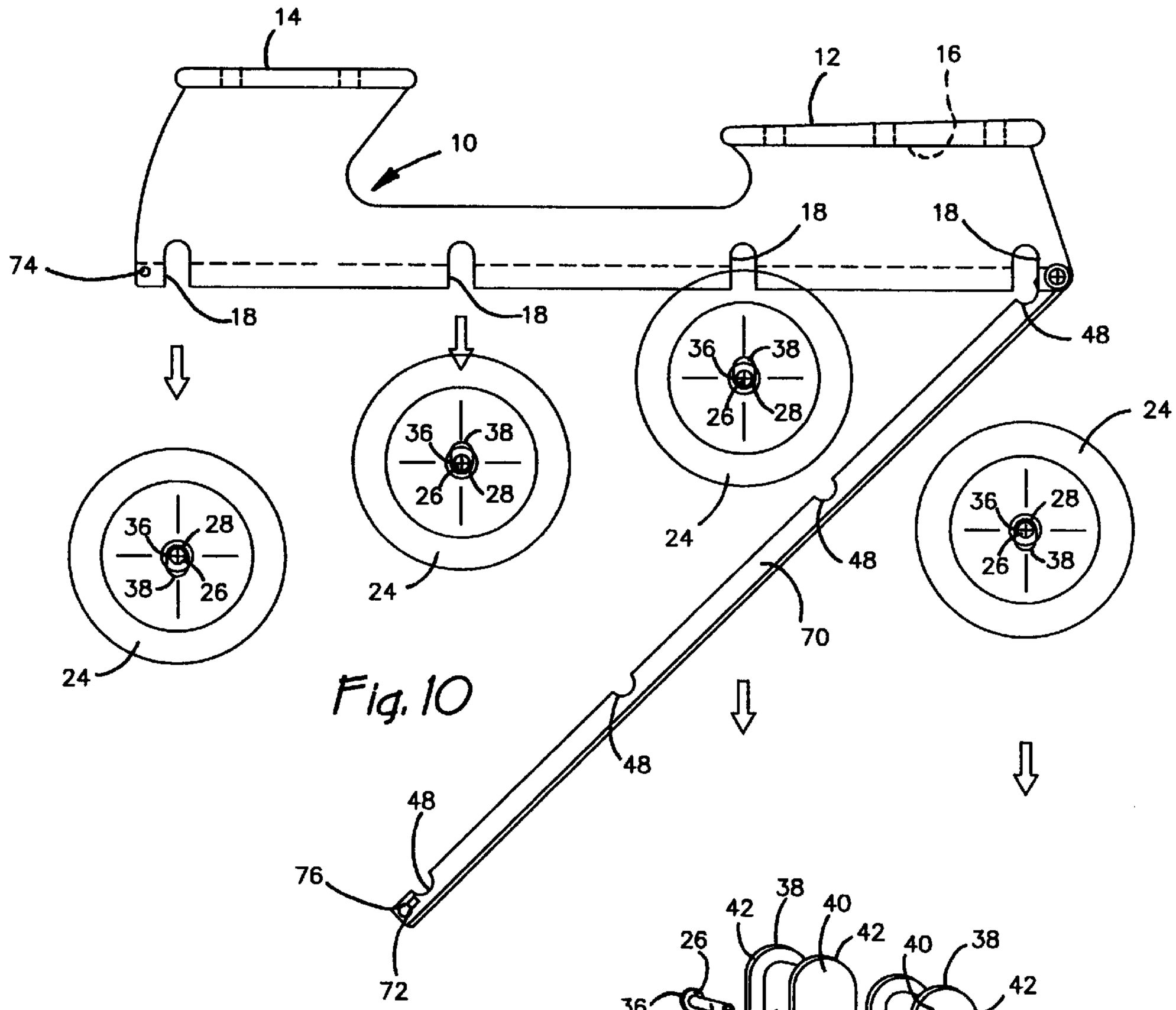


Fig. 10

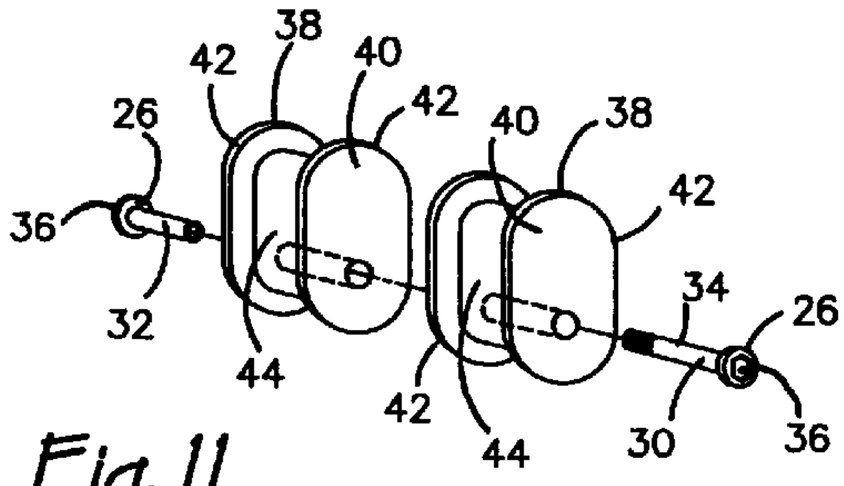


Fig. 11

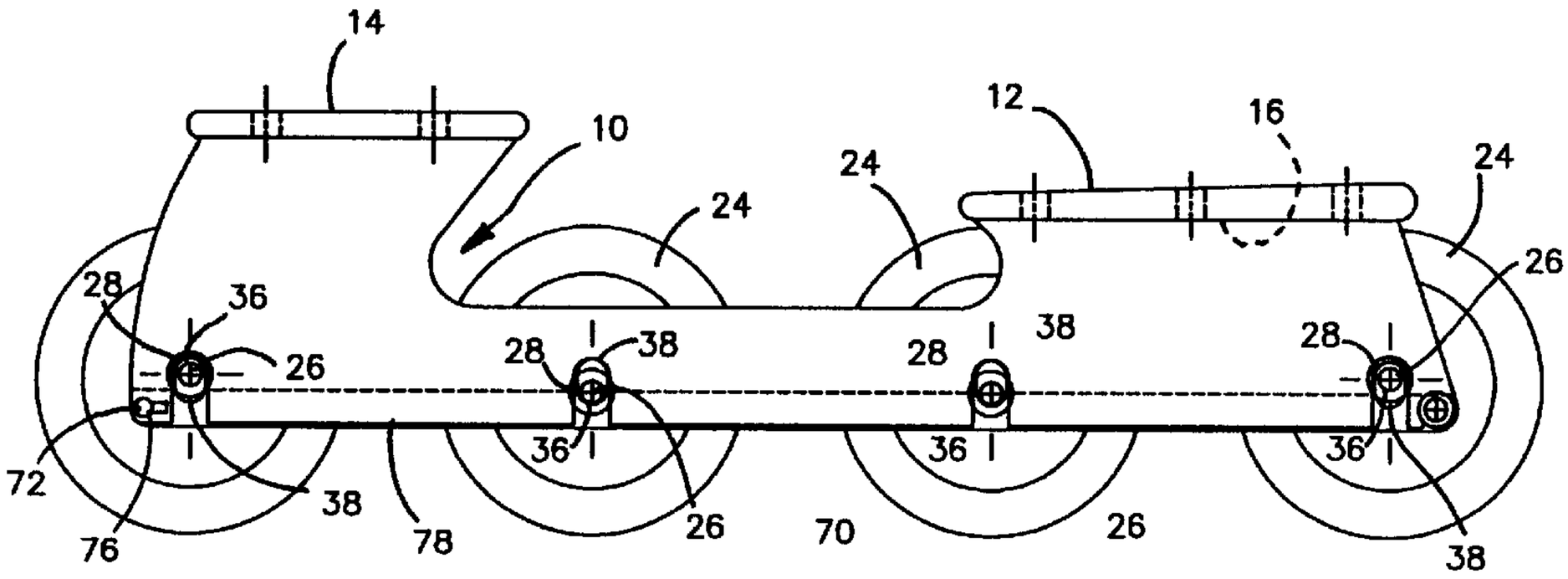


Fig. 12

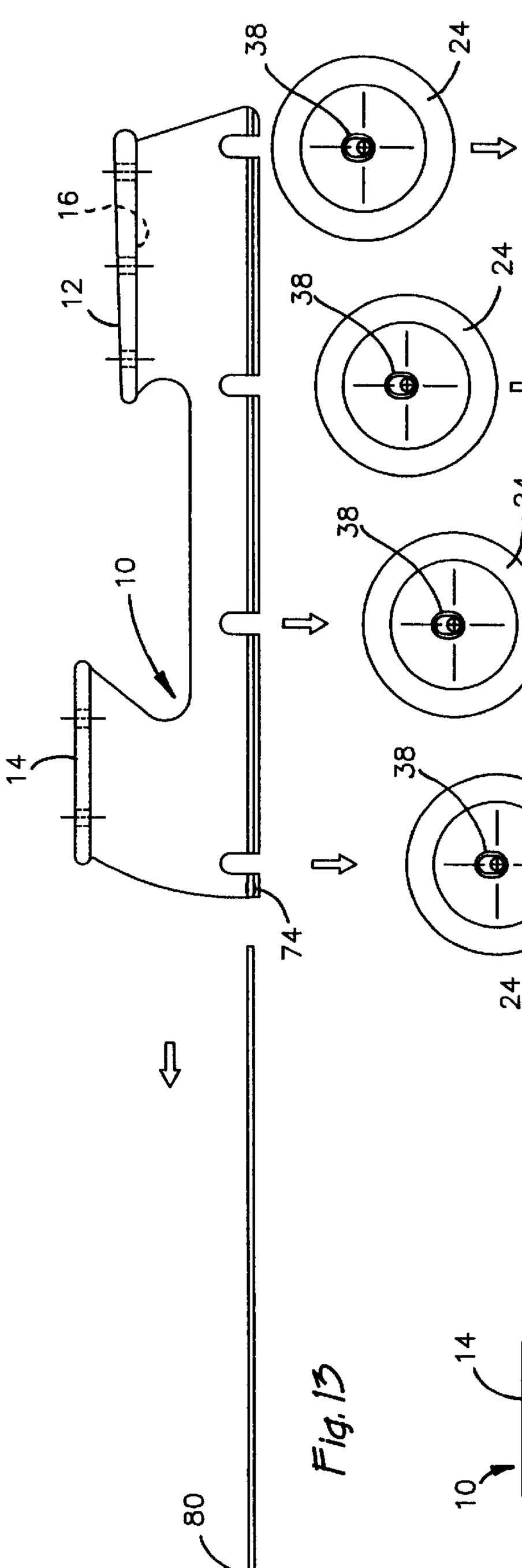


Fig. 13

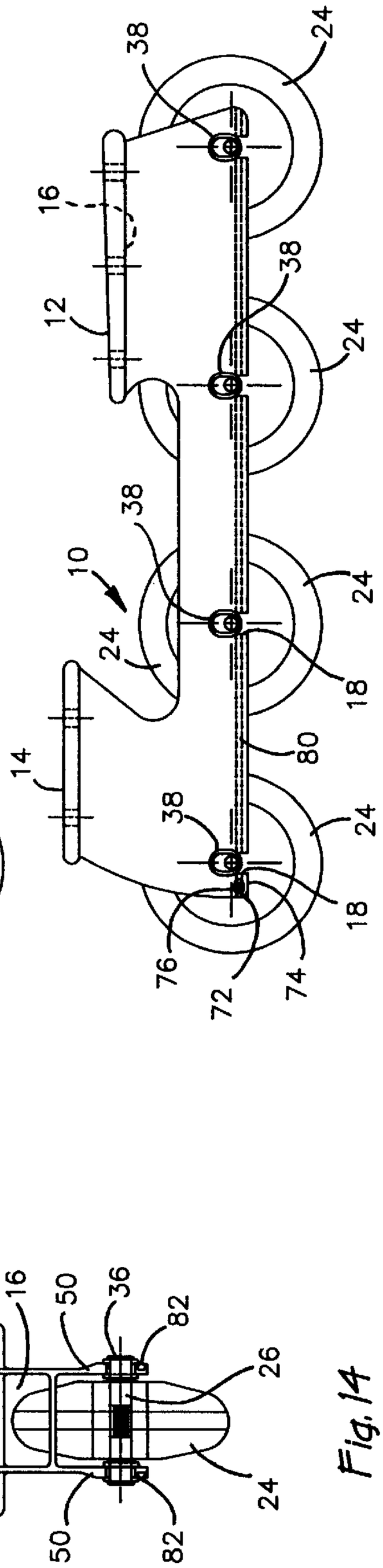


Fig. 15

Fig. 13

Fig. 14

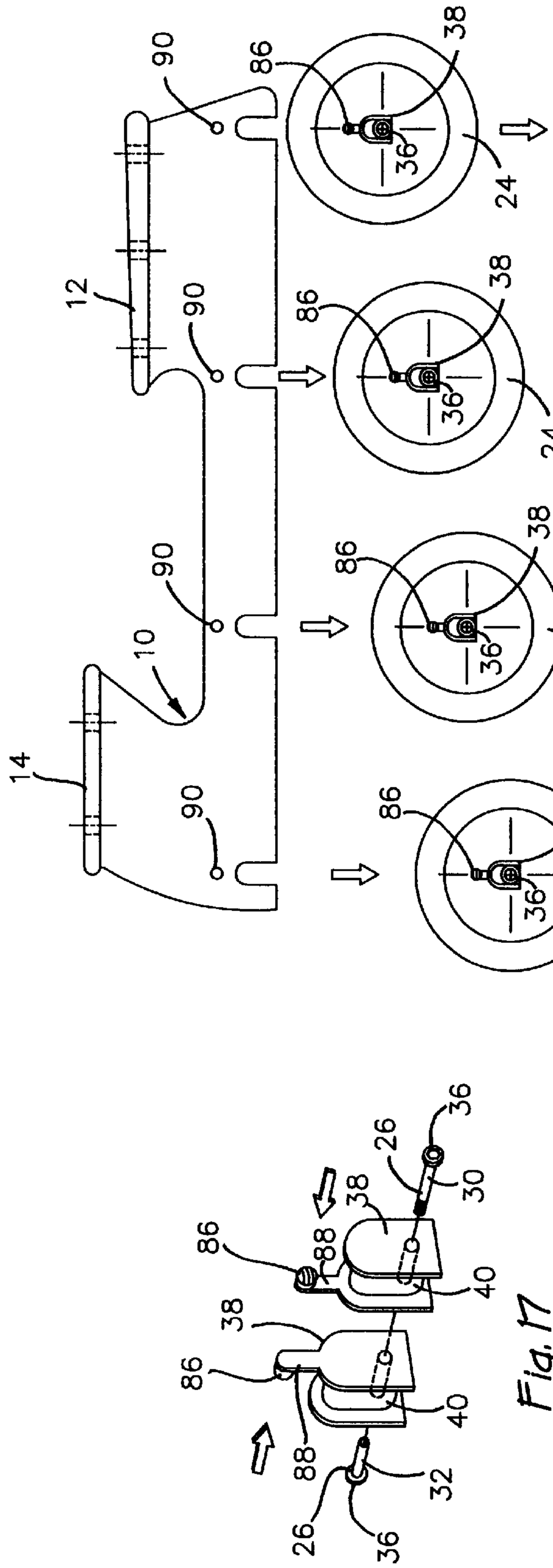


Fig. 16

Fig. 17

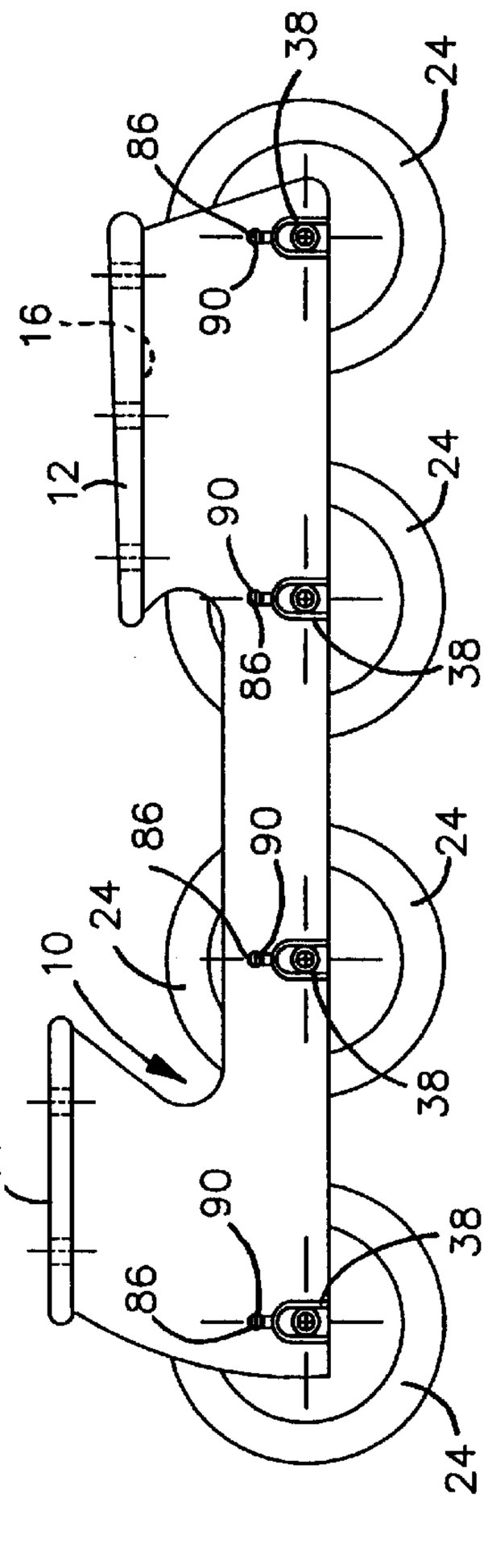


Fig. 18

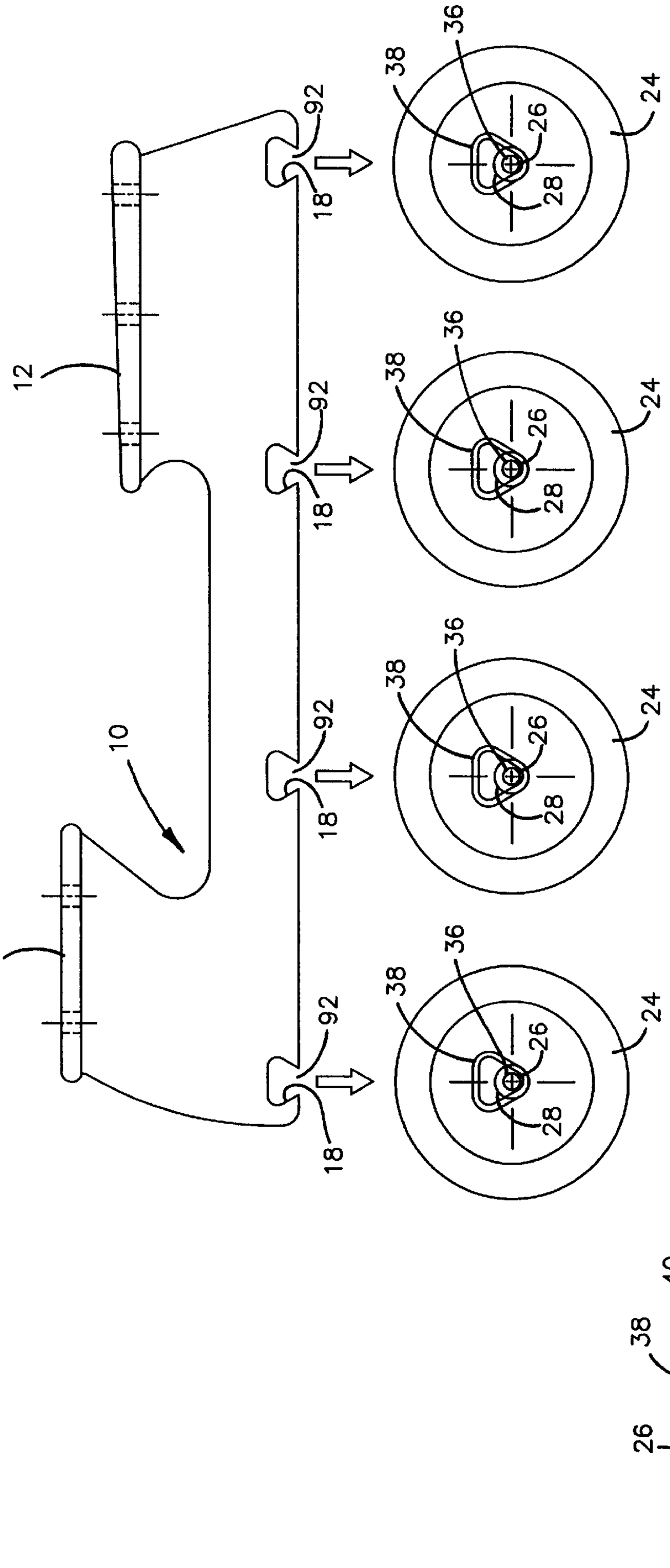


Fig. 19

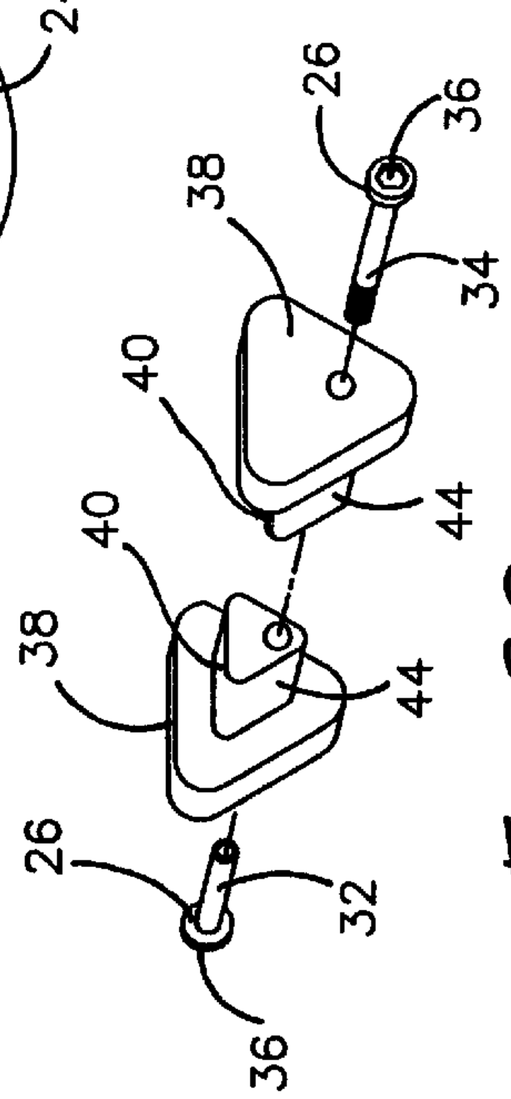


Fig. 20

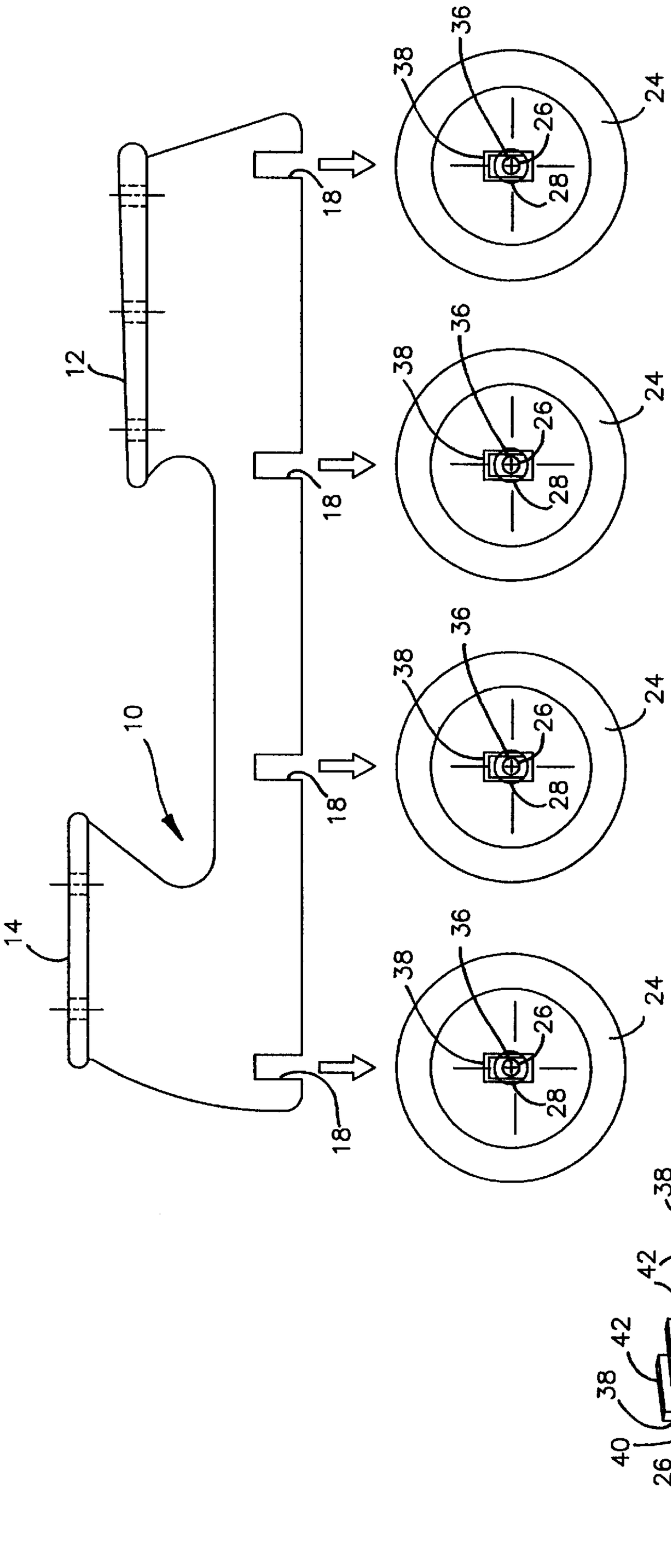


Fig. 21

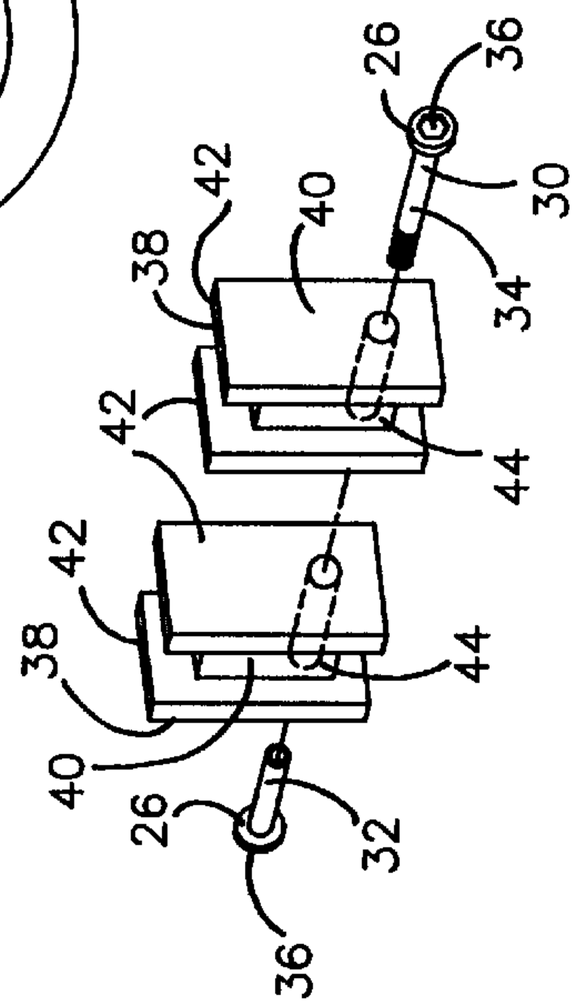


Fig. 22

ROLLER SKATE CHASSIS

This application is a continuation of U.S. application Ser. No. 08/539,185, filed Oct. 4, 1995, now abandoned.

BACKGROUND OF THE INVENTION

The present invention relates to roller blade chassis, and more particularly to an improved roller blade chassis by which the wheels may be more easily interchanged, rotated or replaced.

Roller blades or inline skates have become very popular. Both amateur and professional skaters use roller blade skates. Newly formed are roller blade hockey leagues. Professional roller blade hockey is now being played at many locations throughout the United States.

Well known to inline skaters is the fact that different wheels work better on different surfaces. It is also well known that the wheels of an inline skate wear out. Thus, it is highly desirable to provide an improved chassis for an inline skate. It is also highly desirable to provide an improved inline skate chassis by which the wheels may be replaced as desired.

Inline skaters also know that the toe and heel wheels of an inline skate wear out faster than the middle two wheels. Therefore it is highly desirable to provide an improved inline skate chassis which allows the toe and the heel wheels to be rotated with the middle wheels to provide for even wheel wearage during use of the inline skate. It is also highly desirable to provide an improved inline skate chassis by which each of the wheels of the chassis independently of the other wheels of the chassis may be interchanged with different wheels when desirable or when worn or otherwise needing replacement.

Inline skaters also know that the inline skate wheels wear faster on the outside than on the inside. It is therefore highly desirable to provide an improved inline skate chassis by which the wheels may be rotated inside to outside as desired to provide for even wheel wearage.

Inline skaters have also found it desirable to provide an improved inline skate chassis in which wheels of different sizes can be mounted and used. It is also highly desirable to provide an improved inline skate chassis by which the bushings of the wheel may be mounted in different positions such that the wheels can be mounted on the chassis at different heights.

It is therefore highly desirable to provide an improved inline skate chassis which may be manufactured relatively easily and inexpensively and allows the wheels to be interchanged, rotated or replaced in highly a convenient manner. Finally, it is highly desirable to provide an improved inline skate chassis having all of the above features.

SUMMARY OF THE INVENTION

It is therefore an object of the invention to provide an improved chassis for an inline skate.

It is also an object of the invention to provide an improved inline skate chassis by which the wheels may be replaced as desired.

It is also an object of the invention to provide an improved inline skate chassis which allows the toe and the heel wheels to be rotated with the middle wheels to provide for even wheel wearage during use of the inline skate.

It is also an object of the invention to provide an improved inline skate chassis by which each of the wheels of the chassis independently of the other wheels of the chassis may be interchanged with different wheels when desirable or when worn or otherwise needing replacement.

It is also an object of the invention to provide an improved inline skate chassis by which the wheels may be rotated inside to outside as desired to provide for even wheel wearage.

It is also an object of the invention to provide an improved inline skate chassis by which the bushings of the wheel may be mounted in different positions such that the wheels can be mounted on the chassis at different heights.

It is also an object of the invention to provide an improved inline skate chassis which may be manufactured relatively easily and inexpensively and allows the wheels to be interchanged, rotated or replaced in a highly convenient manner.

It is finally an object of the invention to provide an improved inline skate chassis having all of the above features.

In the broader aspects of the invention there is provided an improved inline skate chassis having a downwardly opening wheel slot extending longitudinally of the chassis. A plurality of downwardly open spaced apart axle slots extend transversely of the wheel slot. A plurality of wheels are mounted on axles with opposite ends. A pair of wheel mounts for each wheel is positioned on the axle adjacent the opposite axle ends, respectively. The wheel mounts are removably secured in the axle slots with the wheels in the wheel slot whereby each of the wheels may be reversed, replaced or changed in position as desired during use.

BRIEF DESCRIPTION OF THE DRAWINGS

The above-mentioned and other features and objects of the invention and the manner of attaining them will become more apparent and the invention itself will be better understood by reference to the following description of an embodiment of the invention taken in conjunction with the accompanying drawings wherein:

FIG. **1** is an exploded side view of the improved inline skate chassis of the invention with the wheels and body bar exploded from the chassis;

FIG. **2** is a top plan view of the bottom bar of the chassis shown in FIG. **1**;

FIG. **3** is a side view of the bottom bar of the chassis shown in FIG. **1**;

FIG. **4** is an end view of the bottom bar of the chassis shown in FIG. **1**;

FIG. **5** is an exploded enlarged view of the wheel mounts of the inline skate chassis shown in FIG. **1**;

FIG. **6** is a top planar view of the chassis shown in FIG. **1**;

FIG. **7** is an end view of the chassis shown in FIG. **1**;

FIG. **8** is a side view of the chassis shown in FIG. **1** fully assembled;

FIG. **9** is a partially exploded side view of the invention showing a modified inline skate chassis of the invention;

FIG. **10** is an exploded side view showing a modified version of the inline skate chassis of the invention;

FIG. **11** is an exploded enlarged view of the wheel mounts of the inline skate chassis version shown in FIG. **10**;

FIG. **12** is a side view of the inline skate chassis shown in FIG. **10** in assembled condition;

FIG. **13** is an exploded side view of a modified version of the inline skate chassis of the invention;

FIG. **14** is an end view of the chassis of FIG. **13**;

FIG. **15** is a side view of the inline skate chassis shown in FIG. **13**, fully assembled;

FIG. **16** is an exploded side view of a modified version of the inline skate chassis of the invention;

FIG. **17** is an exploded enlarged view of the wheel mounts of the inline skate chassis version with the wheel lock of the invention attached shown in FIG. **16**;

FIG. **18** is a side view of the inline skate chassis shown in FIG. **16** fully assembled;

FIG. **19** is an exploded side view of yet another modified inline skate chassis of the invention;

FIG. **20** is an exploded enlarged view of the wheel mounts of the inline skate chassis version shown in FIG. **19**;

FIG. **21** is an exploded side view of yet another modified inline skate chassis of the invention, without the bottom bar of the chassis; and

FIG. **22** is an exploded enlarged view of the wheel mounts of the inline skate chassis version shown in FIG. **21**.

DESCRIPTION OF A SPECIFIC EMBODIMENT

Referring to FIGS. **1-8**, there is shown the improved inline skate chassis **10** of the invention to include a toe mount **12** and a heel mount **14**. The chassis **10** has a downwardly opening wheel slot **16** extending longitudinally of the chassis **10** essentially the entire length thereof. At spaced apart locations, the chassis has a plurality of downwardly opening axle slots **18** extending transversely of the wheel slot **16**. In the specific embodiment illustrated, there is a single wheel slot, and four spaced apart axle slots.

In specific embodiments, the chassis **10** can be molded, cast or extruded of sufficiently strong plastic material or metal, or can be made of bent, cut and welded sheet steel as desired.

In the chassis **10** shown in FIG. **1**, an anchor rib **20** is positioned within the wheel slot **16** between at least the fore and aft pair of axle slots **18** to depend downwardly between the axle slots. These fastening ribs **20** are provided with a threaded hole **22** therein for purpose which will be described hereinafter.

Referring to FIG. **5**, each of the wheels **24** are mounted on an axle bolt **26** which extends through the centrally located bushing **28** in each wheel. Wheels **24** are in all ways conventional. Each of the wheels **24** are provided with an axle hole and bushing **28**. Axle bolt **26** is in a specific embodiment provided in two pieces, a male piece **30** and a female piece **32**. When pieces **30** and **32** are joined by the threads provided, axle bolt **26** provides a constant diameter shaft **34** extending between spaced apart enlarged heads **36**. Mounted on axle bolt **26** are a pair of wheel mounts **38** adjacent to heads **36** with the wheel **24** therebetween.

Wheel mounts **38** each have a centrally located boss **40** and a pair of enlarged flanges **42** secured to opposite ends of the boss **40**. Thus, boss **40** separates the flanges **42** to form a chassis groove **44** between the flanges **42**. Boss **40** is shaped in all embodiments to be complementary to the axle slots **18**. The flanges **42** may be similarly shaped, but larger than boss **40** such that when the boss **40** is within the axle slots **18**, the flanges **42** are on opposite sides of the chassis wall which forms the wheels slots **16**, as will be explained in more detail later. Thus by the wheel mounts **38**, each of the wheels **24** can be removably secured to the chassis by positioning boss **40** of the wheel mounts **38** in the axles slots **18** and the wheels **24** in the wheels slots **16**. In all of the embodiments of the chassis **10**, the wheel units are unconnected and each of the wheels may be positioned in its own respective axle slot **18** or removed therefrom by dropping the entire wheel **24** and wheel mount **38** assembly downwardly of the chassis. See FIGS. **11**, **17**, **21** and **22**, also.

To hold the wheel mounts **38** within the chassis axle slots **16** a bottom bar **46** is provided in those versions of the chassis **10** of the invention shown in FIGS. **1–12**. Still referring to FIG. **1**, bottom bar **46** is connected to latched to the chassis **10** to close both the wheel slots **16** and the axle slots **18**. Bottom bar **46** has spaced apart axle bottom portions **48** which when bottom bar **46** is secured to chassis **10**, forms the bottom of axle slot **18**, closes axle slot **18**, and provides axle slot **18** with a shape which is complementary to the boss **40** of the wheel mounts **38**. Bottom bar **46** also has spaced apart wheel openings **52** which are defined by spaced apart cross members **54** and opposite ends **56** of bottom bar **46**. Within cross bars **54** are screw holes **58** for positioning of screws **60** to engage or latch the threads of threaded hole **22** and ribs **20** afore-mentioned.

Referring to FIGS. **2–9** a modified version of the chassis **10** is shown having bottom bar **46** provided in two pieces each of which are pivotally connected to the chassis at point **66** and **68** both between the center wheels **24**. Otherwise chassis **10** and bottom bars **62, 64** are the same as chassis **10** afore-described and bottom **46**. Bottom bars **62, 64** are secured to chassis **10** by a latch or screw **60** as above described. In another modified version of chassis **10** not shown, bottom bars **62, 64** are pivoted to chassis **10** fore and aft of wheels **24**.

Referring to FIGS. **2–8**, and **10–12**, a third modified version of chassis **10** is shown. In this modification, bottom bar **46** is pivoted to chassis **10** at position **70** ahead of fore wheel **24** and locked to chassis **10** aft of rear wheel **24** by a detent or latch **72**. In this version, detent **72** has a detent opening **74** in chassis **10** above and rearward of axle **26** of aft wheel **24**. Bottom bar **46** has a detent button **76** which can be depressed to hold bottom bar **46** in closed position **70** with detent button **76** at rest in detent opening **74** thus locking bottom bar **46** in position **70** closing wheel slot **16** and axle slots **18** and to hold wheel mounts **38** in axle slots **18** as above described. As illustrated in FIGS. **2–8**, **10** and **11** this embodiment is no different than the first embodiment shown in FIGS. **1–8** except for the elimination of the ribs **20**, holes **24** and screws **60**, attachment of the bottom frame member **46**, and the elevated chassis **10** adjacent the aft end of chassis **10** to elevate the detent **72** above the axle **26** of the aft wheel **24** of the chassis.

Referring to FIGS. **2–8**, and **13–15** a fourth modification of the chassis **10** is shown to comprise the substitution of a pair of latch pins **80** for the bottom bar **46**. Chassis **10** in this version has a bore **82** drilled through both chassis side portions **50** adjacent the bottom and extending the entire length of chassis **10**. Pins **80** fit within respective bores **82** and are locked therein by a latch or detent **72** which in all respects is similar to the detent **72** afore-described. Detent opening **74** however in this modification is coaxial with bore **82**. Pins **80** extend across each axle slot **16** closing the same, and providing a support on which the wheel mounts **38** rest and by which wheel mounts **38** are held in axle slots **16**.

Referring to FIGS. **2–8**, and **16–22**, there is shown three modified versions of the chassis **10** which require no bottom bar **46** whatsoever. In the first version illustrated in FIGS. **2–8**, and **16–18**, each of the wheel mounts **38** are provided with a latch or detent **86** mounted on a flexible and resilient arm **88**. In this embodiment, chassis **10** has a detent opening spaced from the axle slot generally directly above the axle

slot and spaced from the axle slot **16** the same distance as latch or detent **86** is spaced from the axle slot **16**. Thus, each of the wheel mounts can be slid into a respective axle slot and the detent **86** positioned in the latch or detent opening **90** in the chassis **10** as shown thereby securing each wheel to the chassis **10**.

The second version is that shown in FIGS. **2–8, 19** and **20** in which each of the axle slots **18** have latch openings **92** which are smaller than the slot spaced from the opening. In FIG. **17** each of the axle slots **18** are shown to be generally triangular in shape, with the latch openings **92** sufficiently large to pass axles **26** through the latch opening **92**. In this embodiment, wheel mounts **38** are also generally triangular in shape. Bosses **40** are complementary to axle slots **18** and are positioned in the axle slots **18**. In this modification, however, the wheel mounts **38** have only an exterior flange **42** as wheel mounts must be moved axially outwardly away from the chassis to drop the axle **26** through the latch opening **92** of the axle slots **16** to remove the wheels **24** from the chassis **10**. See FIG. **19**. The wheel mounts **38** are positioned within and removed from the axle slots **18** by tightening and loosening respectively the male piece **30** and female piece **32** of the axle **26** so as to urge the wheel mounts together and apart and into and out of the axle slots **18**, axially of axle **26**, respectively. When held in position by the enlarged heads **36** of the axle **26**, the wheel mounts cannot move downwardly as afore-described because they have a size larger than the latch openings **92**, thus securing the wheels **24** in the axle slots **18** without the necessity of a bottom member.

In the third version, wheel mounts **38** have parallel sides as shown in FIGS. **21** and **22** in a generally rectangular shape. While these wheel mounts **38** could be used with bottom bar variations **46, 62, 64** or pin **80** (not shown in FIG. **21**), the generally rectangular or square wheel mounts **38** are shown held in place by a frictional latch which chassis **10** is squeezed between flanges **42** by tightening axle bolt **30, 32**. In still other embodiments, wheel mounts **38** as shown in FIGS. **5, 11** and **20** may be held in axle slots **18** by friction, alone or by friction and a bottom bar **46, 62, 64** and their latches or latch pin **80**, as desired, and the squeezing of the wheel mounts **38** together only seals the wheel mounts **38**, axle **26** and bushing **28** together.

Referring to FIGS. **1** and **9**, there is shown wheel mounts **38** in which the axle **26** and the wheel mounts are coaxial. In FIGS. **9–15**, wheel mounts **38** are elongated and the axes **26** and wheel mounts **38** are not coaxial. In FIGS. **9–15**, axles **26** are adjacent one end and spaced from the other end. This allows the wheel units to be inserted into wheel slots in two distinct positions. In FIGS. **9–15**, axles **26** may be positioned adjacent the upper end of the wheel mounts **38** and the wheels **24** may extend from the chassis **10** a minimum distance. In FIGS. **9–15**, axles **26** may be adjacent the lower end of wheel mounts **38** as shown and the wheels **24** are extended from the chassis **10** a maximum distance.

The wheel mounts **38** of FIGS. **10–15** allow wheels **24** to be positioned to allow "rockering" with two of the wheels in their lowest position and two of the wheels in their highest position. "Rockering" is a term used by inline skaters to describe the action when skating on a chassis having the middle two wheels in their lowest or most extended position and the fore and aft wheels in their highest or retracted position.

Referring to FIGS. **19** and **21** wherein the wheel mounts are generally in a triangular and square or rectangular shapes, respectively, axles **26** are positioned adjacent one of the apexes or corners so to allow not only positioning the wheels **24** in a retracted and an extended position and to allow "rockering" as above described, but to allow the wheels to be moved fore and aft of a central position as shown in FIG. **19** and **21**.

In all embodiments, the movement of the wheels fore and aft or up and down to accommodate "rockering" and/or other changes may be selected by the skater by positioning the wheel mounts **38** in the axle slots **16**, selectively, prior to securing the same to the chassis **10**.

In operation, the improved inline skate chassis **10** of the invention functions to allow each of the wheels **24** to be replaced with other wheels **24**, repositioned with respect to both axial height and wheel position, rotated, exchanged with other wheels **24**. The improved chassis **10** of the invention with the total flexibility as to the attachment of individual wheels **24** allows for the skater to adjust the axial height of the wheels **24** for "rockering", to rotate the wheels and to flip the wheels **24** in the same position to achieve maximum wear, and to change the wheels **24** with regard to different skating surfaces. All is possible with the improved chassis **10** of the invention without the use of tools.

With reference to FIGS. **1, 9, 12** and **18**, the bottom bar **46** and/or wheel mounts **38** are lowered by releasing it latch, i.e. either depressing the detent **74, 86** or by loosening the screws **60** and lowering the bottom bars **46, 62, 64**. In this position all four wheels **24** will drop out of the axle slots **18** in which they are positioned to be repositioned within the axle slots **18** as desired. If individual wheels **24** are to be replaced with other wheels **24** not being disturbed, the chassis **10** can be rotated 180° such that the axle slots **18** openings **92** face upwardly and individual wheels **24** can be replaced, rotated or exchanged as desired without disturbing the remaining wheels **24** which are held in the axle slots **18** by gravity. When all the wheels **24** are positioned as desired, the bottom bar is positioned in its at rest or closed position and the latch detent **74** is re-engaged or the latch screws **60** are tightened, and the inline skate is ready to use.

The axle slots **16** and the wheel mounts **38** as shown in FIGS. **1** and **9** provide each of the wheels **24** a total of two positions (1) as shown (2) reversed from that shown. The axle slots **16** and the elongated wheel mounts **38** as shown in FIGS. **10–15** have a total of four positions (1) retracted as shown (2) extended as shown (3) reversed retracted (4) reversed extended. The axle slots and wheel mounts **38** being generally triangular in shape as shown in FIGS. **19** and **20** have a total of six positions (1) retracted, forward (2) retracted, rearward (3) extended as shown (4) reversed retracted forward (5) reversed retracted rearward and (6) reverse extended. The axle slots **16** and wheel mounts **38** as shown in FIGS. **21** and **22** as being generally rectangular or square, similarly, have a total of four positions.

Referring to FIGS. **13–15** there is shown the modified chassis **10** having bottom pins **80** which may be fully or partially removed from the chassis **10** by disengaging latch detent **74** from the chassis **10** and moving the pins **80** relative to the chassis **10** longitudinally thereof to open the axle slots **18** and to allow the wheel mounts **38** to drop from the chassis **10** as above described. If only a single wheel **24** needs to be removed from the axle slots **18**, chassis may be rotated 180° to face the axle slots **18** upwardly and to remove the pins **80** so as to be able to remove each of the wheels **24** from the axle slots **18** selectively while the remaining wheels **24** are held within the axle slots by gravity. In this manner, the wheels **24** of the chassis **10** as shown may be selectively replaced, exchanged, rotated, or

otherwise repositioned with regard to the chassis as needed. Once all the wheels **24** are located within the axle slot **16** as desired, latch pins **80** are reinserted in the chassis bore **82** and the latch detents are re-engaged with the chassis.

With regard to FIGS. **16–18**, chassis **10** and wheel mounts **38** are provided with latch detents **86** whereby each of the wheel mounts **38** are locked into position without the necessity of a bottom bar **46**. In this embodiment, each of the wheels must be disengaged from the chassis **10** individually by depressing the detent **86** to disengage the detent **86** from the chassis opening **90** and to drop the wheel mount **38** from the chassis **10** through the axle slot **18** downwardly. In this manner each of the wheels **24** may be exchanged, replaced, or rotated as above described. In order to raise or lower the wheels **24** into their retracted and extended wheel positions above-described, the wheel mounts **38** must be exchanged for wheel mounts **38** having latch detents **86** with longer and shorter arms **88**.

Referring to FIGS. **19** and **20**, chassis **10** has axle slots **18** which do not have parallel side walls so as to accommodate generally triangular wheel mounts **38** as shown. In this embodiment, the wheel mounts **38** are removed from the axle slots **18** by disengaging the male **30** and female **32** axle pieces as above described and moving the axle pieces **30, 32** axially outwardly away from the chassis **10**. Inside flange **42** has been removed to allow this movement. Wheel mounts **38** can be removed from the axle slots **18** and the axle **26** dropped downwardly through the opening of the axle slots **18** as above described. In this way, each of the wheels **24** may be individually replaced, exchanged, rotated and positioned as above described.

Referring to FIGS. **21** and **22**, chassis **10** is shown to have axle slots **18** which have parallel sidewalls to accommodate generally rectangular and square wheel mounts **38** as shown. In this embodiment, the wheel mounts **38** can be removed from the axle slots **18** both by disengaging the male **30** and female **32** axle pieces as above described and moving the axle pieces **30, 32** axially outwardly away from the chassis **10** and by merely loosening the male **30** and female **32** axle pieces and dropping the wheel mounts **38** downwardly through the opening of the axle slots **18** so as to separate the same from the chassis **10**. In both ways, each of the wheels **24** may be individually replaced, exchanged, rotated or positioned as above described. In this embodiment, as there are no bottom bars **46, 62, 64** or pins **80**, the wheel mounts **38** are held in the wheel slots **18** totally by a frictional latch with the forces exerted upon the wheel mounts **38** by the male **30** and female **32** axle pieces to squeeze the chassis **10** therebetween.

In each of the chassis **10**, wheels **24** may be exchanged on different chassis **10** by exchanging wheel mounts **38** separating male axle piece **30** from female axle piece **32** and wheel mounts **38** may be selectively exchanged by sliding the existing wheel mounts **38** and the wheel **24** from the axle **26**. The selected wheel mounts **38** can then be positioned on axle **26** with the selected wheel **24** therebetween and the male and female axle pieces of the axle **26** reconnected as shown.

As above described, the improved chassis for an inline skate provides an improved chassis by which the wheels may be replaced in an inline skate, an improved chassis by which the wheels of the chassis may be interchanged with different wheels when desirable or when worn or otherwise needing replacement, an improved chassis in which the toe and the heel wheel may be rotated with the middle wheel to provide for even wheel wearage during use of the inline skate, an improved chassis by which the wheels may be rotated as desired to provide for even wheel wearage, an improved chassis by which the bushings of the wheel may be mounted off center such that the wheels can be mounted in the chassis at different heights, and an improved chassis which may be manufactured relatively inexpensively and is highly convenient to use.

While a specific embodiment of the invention has been shown and described herein for purposes of illustration, the protection afforded by any patent which may issue upon this application is not strictly limited to the disclosed embodiment; but rather extends to all structures and arrangements which fall fairly within the scope of the claims which are appended hereto:

What is claimed is:

1. A chassis assembly for an inline skate adapted to be mounted to a boot and to releasably secure a plurality of preassembled wheel and axle assemblies, the chassis assembly comprising:

an elongated channel member comprising a central portion adapted to be mounted to the boot and two flanges depending from the central portion and spaced to receive upper portions of a plurality of aligned wheels therebetween, the flanges comprising lower longitudinal edges having a plurality of longitudinally spaced opposing pairs of axle slots, each pair of opposing axle slots adapted to receive through hand-insertion opposite ends of an axle of one of the wheel and axle assemblies,

at least one axle retention member adapted to be releasably mounted adjacent the lower edges of the flanges to selectively lock a plurality of the wheel and axle assemblies in respective pairs of axle slots, the retention member having a length sufficient to span a plurality of axle slots along the lower edges of the flanges and a width sufficient to span opposing pairs of axle slots, the retention member including a central portion adapted to allow free rotation of the wheels when the retention member is in position to lock the wheel and axle assemblies in the axle slots; and

means for releasably securing the retention member to the channel mainline to lock a plurality of the wheel and axle assemblies in respective pairs of axle slots, the means being operable with human fingers without the need for any auxiliary tools.

2. The chassis assembly of claim **1** wherein the means for releasably securing the retention member to the channel member includes a hand operable screw.

3. The chassis assembly of claim **1** wherein the means for releasably securing the retention member to the channel member includes at least one detent on the retention member which engages a complementary detent opening on the channel member.

4. The chassis assembly of claim **1** wherein the retention member is pivotally connected to the channel member such that the retention member can pivot between an open position for the selective insertion and/or removal of the wheel and axle assemblies from respective pairs of axle slots and a closed position to wherein the retaining member locks a plurality of the wheel and axle assemblies in respective pairs of axle slots.

5. The chassis assembly of claim **4** wherein the means for releasably securing the retention member to the channel member includes a hand operable screw.

6. The chassis assembly of claim **4** wherein the means for releasably securing the retention member to the channel member includes at least one detent on the retention member

which engages a complementary detent opening on the channel member.

7. The chassis assembly of claim of claim **1** wherein the retention member includes a pair of opposing upstanding flanges having a plurality of opposing longitudinally spaced notches which have a complementary configuration to the axle slots and the wheel and axle assemblies and are located such that when the retention member is in position to lock the wheel and axle assemblies in the axle slots the notches close off the axle slots.

8. The chassis assembly of claim **7** wherein the retention member includes a plurality of openings sized and located to allow free rotation of the wheels when the retention member is in position to lock the wheel and axle assemblies in the axle slots.

9. The chassis assembly of claim **1** further including a second retention member adapted to be releasably mounted adjacent the lower edges of the flanges to selectively lock a plurality of the wheel and axle assemblies in respective pairs of axle slots, the second retention member having a length sufficient to span a plurality of axle slots along a lower edges of the flanges and a width sufficient to span opposing pairs of axle slots, the second retention member including a central portion adapted to allow free rotation of the wheels when the second retention member is in position to lock the wheel and axle assemblies in the axle slots.

10. The chassis assembly of claim **9** wherein the first retention member and the second retention member are each pivotally connected to the channel member such that the first and second retention members can each pivot between an open position for the selective insertion and/or removal of the wheel and axle assemblies from respective pairs of axle slots and a closed position wherein the retaining member locks a plurality of the wheel and axle assemblies in respective pairs of axle slots.

11. A chassis assembly for an inline skate adapted to be mounted to a shoe and which allows for quick and easy rotation and replacement of the wheels of the skate, said chassis comprising:

an elongated channel member including a central portion adapted to be mounted to the shoe and a pair of flanges depending from the central portion which have lower longitudinal edges including a plurality of longitudinally spaced opposing pairs of axle slots;

a plurality of preassembled wheel and axle assemblies, each preassembled wheel and axle assembly comprising a wheel arranged between the flanges of the channel member and rotatably supported on an axle, the axle having a wheel mount at each end which is adapted to be retained in and engage a respective one of the axle slots such that the entire preassembled wheel and axle assembly can be selectively removed from the chassis by sliding the assembly downwardly relative to the channel member by hand,

a selectively releasable retention member secured adjacent the lower edges of the channel member flanges and adapted to engage the plurality of wheel mounts and close off the opposing pairs of axle slots so as to prevent movement of the wheel mounts relative to the axle slots, and

means for releasably securing the retention member to the channel member which is operable with human fingers without any need for any auxiliary tools.

12. The chassis assembly of claim **11** wherein the means for releasably securing the retention member to the channel member includes a hand operable screw.

13. The chassis assembly of claim **11** wherein the means for releasably securing the retention member to the channel member includes at least one detent on the retention member which engages a complementary detent opening on the channel member.

14. The chassis assembly of claim **11** the retention member is pivotally connected to the channel member such that it can pivot between an open position for selective insertion and/or removal of the preassembled wheel and axle assemblies from respective pairs of axle slots and a closed position wherein the retaining member locks a plurality of the preassembled wheel and axle assemblies in respective pairs of axle slots.

15. The chassis assembly of claim **14** wherein the means for releasably securing the retention member to the channel member includes a hand operable screw.

16. The chassis assembly of claim **14** wherein the means for releasably securing the retention member to the channel member includes at least one detent on the retention member which engages a complementary detent opening on the channel member.

17. The chassis assembly of claim of claim **11** wherein the retention member includes a pair of opposing upstanding flanges having a plurality of opposing longitudinally spaced notches which have a complementary configuration to the axle slots and the wheel mounts and are located such that when the retention member is in position to lock the wheel assemblies the notches engage the wheel mounts and close off the axle slots.

18. The chassis assembly of claim **17** wherein the retention member includes a plurality of openings sized and located to allow free rotation of the wheels when the retention member is in position to lock the preassembled wheel and axle assemblies in the axle slots.

19. The chassis assembly of claim **11** further including a second retention member adapted to be releasably mounted adjacent the lower edges of the flanges to selectively lock a plurality of the preassembled wheel and axle assemblies in respective pairs of axle slots, the second retention member having a length sufficient to span a plurality of axle slots along a lower edges of the flanges and a width sufficient to span opposing pairs of axle slots, the second retention member including a central portion adapted to allow free rotation of the wheels when the second retention member is in position to lock the preassembled wheel and axle assemblies in the axle slots.

20. The chassis assembly of claim **19** wherein the first retention member and the second retention member are each pivotally connected to the channel member such that the first and second retention members can each pivot between an open position for selective insertion and/or removal of the preassembled wheel and axle assemblies from respective pairs of axle slots and a closed position wherein the retaining member locks a plurality of the preassembled wheel and axle assemblies in respective pairs of axle slots.

21. The chassis assembly of claim **11** wherein each of the wheel mounts include a central boss and pair of flanges on opposing ends of the boss which define a groove which engages the axle slot to prevent movement of the wheel mounts in the axial direction of the wheel.

22. The chassis assembly of claim **11** wherein the wheel mounts have a central axis and said axle is offset from the wheel mount central axis such that position of the wheel relative to the channel member can be selectively varied.

23. The chassis assembly of claim **22** wherein the wheel mounts have an elongated configuration with opposing ends and the axle is adjacent one of the opposing ends such that position of the wheel relative to the channel member can be selectively varied.

24. The chassis assembly of claim **22** wherein the wheel mounts have a generally rectangular shape and the axle is adjacent one of the corners of the wheel mounts such that position of the wheel relative to the channel member can be selectively varied.

25. The chassis assembly of claim **22** wherein the wheel mounts have a generally triangular configuration such that position of the wheel relative to the channel member can be selectively varied.

26. The chassis assembly of claim **11** wherein each wheel assembly further includes a bushing which rotatably supports the wheel on the axle.

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